File No. 8-90-421-SI

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FIFTH QUARTERLY GROUNDWATER MONITORING AND SAMPLING FOR KAMUR INDUSTRIES PLAZA CAR WASH LOCATED AT 400 SAN PABLO AVENUE ALBANY, CALIFORNIA AUGUST 24, 1992

PREPARED FOR:
KAMUR INDUSTRIES, INC.
2351 SHORELINE DRIVE
ALAMEDA, CALIFORNIA 94501

BY:
SOIL TECH ENGINEERING, INC.
298 BROKAW ROAD
SANTA CLARA, CALIFORNIA 95050

SOIL TECH ENGINEERING, INC.

File No. 8-90-421-SI

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SOIL TECH ENGINEERING
Soil, Foundation and Geological Engineers
298 BROKAW ROAD, SANTA CLARA, CA 95050 ■ (408) 496-0265 OR (408) 496-0266

August 24, 1992

File No. 8-90-421-SI

Kamur Industries
2351 Shoreline Drive
Alameda, California 94501

ATTENTION: MR. MURRAY STEVENS

SUBJECT: QUARTERLY GROUNDWATER MONITORING AND SAMPLING FOR KAMUR INDUSTRIES AT PLAZA CAR WASH Located at 400 San Pablo Avenue, in Albany, California

Dear Mr. Stevens:

This report presents the results of the fifth quarterly groundwater monitoring and sampling conducted by Soil Tech Engineering, Inc. (STE), on August 17, 1992, at the subject site (Figure 1).

BACKGROUND:

Currently there are four monitoring wells (MW-2, MW-3, STMW-1 and STMW-2) located on-site, and two wells OTMW-5 and OTMW-6 are off-site (See Figure 2). Wells STMW-1 and STMW-2 were installed by STE, on-site wells MW-2, MW-3 and off-site wells OTMW-5 and OTMW-6 were installed by other consultant. This quarterly well monitoring and sampling was conducted in accordance with STE's recommendations

made in "Report of Supplemental Subsurface Investigations", dated May 14, 1991. During this quarter's reporting period, the following field activities were performed:

- Monitored the depth to water in all shallow groundwater wells.
- Purged each monitoring well prior to sampling.
- Submitted water samples to a state-certified laboratory to be analyzed for Total Petroleum Hydrocarbons as gasoline (TPHg) and for aromatic hydrocarbons: Benzene, Toluene, Ethylbenzene, and Total Xylenes (BTEX).
- Reviewed results and prepared a report of the investigation.

GROUNDWATER MONITORING:

On August 17, 1992, STE staff monitored the four on-site wells and two off-site wells to measure water depth and check for the presence of free floating petroleum product (FFP) and/or petroleum odor. During monitoring of the wells, **a light sheen was noted in well MW-3 only, and mild petroleum odors were noted in wells STMW-1, MW-2 and MW-3. After purging the well MW-3, no sheen was observed.** Table 1 summarizes the depth to groundwater measurements and observations made. Static groundwater levels ranged from 4.43 to 5.77 feet beneath ground surface during the recent sampling event.

GROUNDWATER SAMPLING:

Following groundwater monitoring, each well was purged at least four well volumes and sampled in accordance with STE's Standard Operating Procedures (see Appendix "B"), which follows state and local guidelines for sampling and monitoring wells. The samples were submitted for analysis to a California State-Certified laboratory, accompanied by chain-of-custody. The samples were analyzed for TPHg and for BTEX per modified EPA Methods 5030/8025 and 602.

GROUNDWATER FLOW:

The water elevation data were used to determine groundwater direction. Table 1 summarize the groundwater elevations. The groundwater flow direction beneath the site was in northwesterly direction as of August 17, 1992 (Figure 2).

ANALYTICAL RESULTS:

All wells continued to show the presence of petroleum hydrocarbon constituents analyzed. TPHg ranged from 0.087 milligrams per liter (mg/L) in well OTMW-5 to a maximum of 140 mg/L in well MW-3; Benzene ranged from 0.012 mg/L in well OTMW-5 to a maximum 2.5 mg/L in well MW-3; Toluene concentration ranged from 0.0098 to 2.4 mg/L; Ethylbenzene ranged from 0.004 to 1.7 mg/L; and Total Xylenes ranged from 0.042 to 5.5 mg/L, respectively. TPHg and BTEX concentration levels were non-detectable in well OTMW-6.

The analytical results are presented in Table 2. The chain-of-custody records and certified analytical report are included in Appendix "C".

DISCUSSION:

A comparison of the recent analytical results with the May 7, 1992 results showed a decrease in TPHg concentrations in wells STMW-1 (from 4.4 to 2.7 mg/L); MW-2 (from 10 to 6 mg/L) and OTMW-5 (from 0.18 to 0.087 mg/L). TPHg concentrations increased in wells STMW-2 (from 1.7 to 16 mg/L) and MW-3 (from 43 to 140 mg/L).

Benzene concentrations decreased in this quarter in wells STMW-1, MW-2 and OTMW-5, but increased in wells STMW-2 (from 0.032 to 0.18 mg/L), and MW-3 (from 0.25 to 2.5 mg/L). Toluene levels showed an increased in wells STMW-2 and MW-3, but decreased in wells STMW-1 (from 0.053 to 0.018 mg/L), MW-2 (from 0.062 to 0.048 mg/L) and OTMW-5 (from 0.014 to 0.0098). Ethylbenzene levels showed an increase in wells STMW-1, STMW-2, MW-2, and MW-3, except in well OTMW-5, which showed a moderate decrease. Total Xylenes showed an increase in wells STMW-2, MW-2, MW-3 and OTMW-5, except for well STMW-1, which showed a moderate decrease.

RECOMMENDATION:

On-site wells and off-site wells monitoring and sampling should continue for three more quarters.

LIMITATIONS:

This report and the associated work have been provided in accordance with the general principles and practices currently employed in the environmental consulting profession. The contents of this report reflect the conditions of the site at this particular time. The findings of this report are based on:

1) The observations of field personnel.

2) The results of laboratory analyses performed by a state-certified laboratory.

It is possible that variations in the soil and groundwater could exist beyond the points explored in this investigation. Also, changes in groundwater conditions of a property can occur with the passage of time due to variations in rainfall, temperature, regional water usage and other natural processes or the works of man on this property or adjacent properties.

The services that STE provided have been in accordance with generally accepted environmental professional practices for the nature and conditions of the work completed in the same or similar localities, at the time the work was performed.

This report will be submitted to ACEHD and RWQCB with your approval.

File No. 8-90-421-SI

If you have any questions or require additional information, please feel free to contact our office at your convenience.

Sincerely,

SOIL TECH ENGINEERING, INC.

NOORODDIN AMELI
STAFF ENGINEER

LAWRENCE KOO, P. E.
C. E. #34928

FRANK HAMEDI-FARD
GENERAL MANAGER

TABLE 1
GROUNDWATER MONITORING DATA
(Measured in Feet)

Well No./ Elevation	Date	Depth-to-Water	Groundwater Elevation	FFP Thickness	Petroleum Odor
STMW-1 (100.62)	3/11/91	5.29	95.33	None	None
	7/03/91	5.83	94.79	None	Mild
	11/04/91	5.83	94.79	None	Mild
	1/20/92	5.79	94.84	Light Sheen	Mild
	5/07/92	5.80	94.82	None	Mild
	8/17/92	5.77	94.85	None	Mild
STMW-2 (100.63)	3/11/91	5.25	95.38	None	Mild
	7/03/91	4.75	95.88	None	Mild
	11/04/92	5.92	94.71	None	Mild
	1/20/92	5.88	94.75	None	Mild
	5/07/92	5.70	94.92	None	Mild
	8/17/92	5.71	94.92	None	None

FFP - Free Floating Product

TABLE 1 CONT'D
GROUNDWATER MONITORING DATA
(Measured in Feet)

Well No./ Elevation	Date	Depth-to-Water	Groundwater Elevation	FFP Thickness	Petroleum Odor
MW-2 (99.39)	3/11/91	4.29	95.07	None	Mild
	7/03/91	5.83	93.53	None	Strong
	11/04/91	4.79	94.57	None	Mild
	1/20/92	4.60	94.76	None	Mild
	5/07/92	4.42	94.94	None	Mild
	8/17/92	4.43	94.96	None	Mild
MW-3 (100.09)	3/11/91	4.67	95.42	Trace	Moderate
	7/03/91	5.75	94.55	Light Sheen	Strong
	11/04/91	5.67	94.42	Trace	Strong
	1/20/92	5.54	94.55	Light Sheen	Strong
	5/07/92	5.18	94.91	Rainbow Sheen	Strong
	8/17/92	5.24	94.85	Rainbow Sheen	Mild

FFP - Free Floating Product

TABLE 1 CONT'D
GROUNDWATER MONITORING DATA
(Measured in Feet)

Well No./ Elevation	Date	Depth-to-Water	Groundwater Elevation	FFP Thickness	Petroleum Odor
OTMW-5 (100.87)	3/11/91	5.02	95.85	None	Mild
	7/03/91	5.75	95.12	None	Mild
	11/04/91	5.77	95.10	None	Mild
	1/20/92	5.58	95.29	None	Mild
	5/07/92	5.43	95.44	None	Mild
	8/17/92	5.45	95.42	None	None
OTMW-6	8/17/92	4.88	NA	None	None

FFP - Free Floating Product
NA - Not Applicable

TABLE 2
WATER ANALYTICAL RESULTS
IN
MILLIGRAMS PER LITER (mg/L)

Well No.	Date	TPHg	B	T	E	X
STMW-1	3/13/91	0.85	0.1	0.007	ND	0.15
	7/03/91	5.1	1.8	0.5	0.095	0.56
	11/04/91	2.05	0.76	0.054	ND	0.056
	1/20/92	4.6	0.59	0.036	ND	0.19
	5/07/92	4.4	0.066	0.053	0.004	0.16
	8/17/92	2.7	0.031	0.018	0.019	0.067
STMW-2	3/13/91	0.17	0.001	0.0017	ND	0.028
	7/03/91	1.8	0.64	0.048	0.044	0.094
	11/04/91	2.14	1.00	0.057	0.003	0.019
	1/20/92	14	0.12	0.0006	0.0006	0.08
	5/07/92	1.7	0.032	0.017	0.0086	0.048
	8/17/92	16	0.18	0.22	0.21	0.62

TPHg = Total Petroleum Hydrocarbons as gasoline
BTEX = Benzene, Toluene, Ethylbenzene, Xylenes
ND = Not Detected (Below Detection Limit)

TABLE 2 CONT'D
WATER ANALYTICAL RESULTS
IN
MILLIGRAMS PER LITER (mg/L)

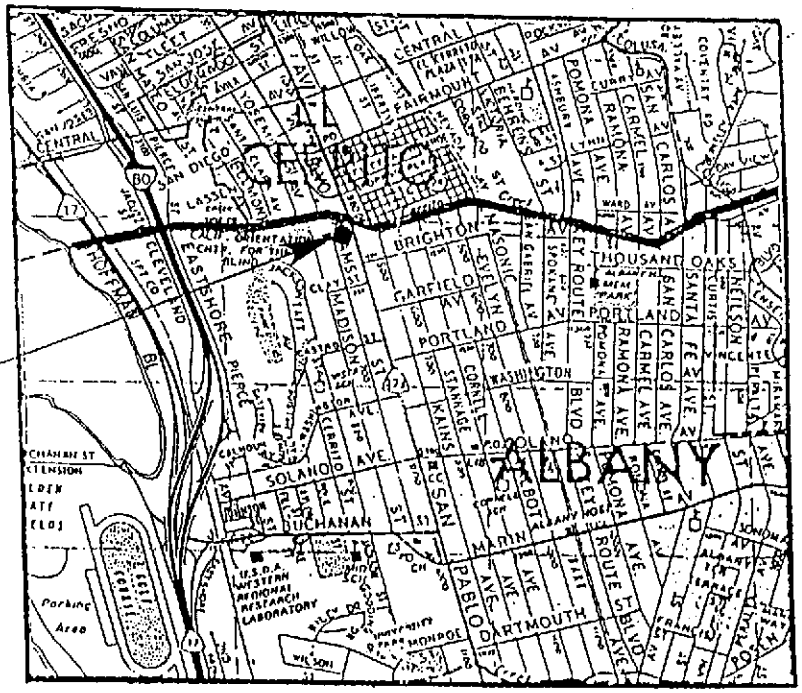
Well No.	Date	TPHg	B	T	E	X
MW-2	3/13/91	25	2.6	4.4	ND	5.8
	7/03/91	21	2.8	3.2	ND	4.3
	11/04/91	3.58	1.7	0.119	0.009	0.056
	1/20/92	0.38	0.38	0.0013	ND	0.034
	5/07/92	10	0.062	0.032	0.044	0.16
	8/17/92	6	0.048	0.027	0.065	0.18
MW-3	3/13/91	47	9.1	9.9	0.27	8.11
	7/03/91	40	12	4.5	1.2	4.0
	11/04/91	102.7	38.87	19.1	3.2	8.3
	1/20/92	510	27	27	5.8	46
	5/07/92	43	0.25	0.23	0.12	0.47
	8/17/92	140	2.5	2.4	1.7	5.5

TPHg - Total Petroleum Hydrocarbons as gasoline
BTEX - Benzene, Toluene, Ethylbenzene, Total Xylenes
ND - Not Detected (Below Laboratory Detection Limit)

TABLE 2 CONT'D
WATER ANALYTICAL RESULTS
IN
MILLIGRAM PER LITER (mg/L)

Well No.	Date	TPHg	B	T	E	X
OTMW-5	3/13/91	0.12	0.046	0.012	0.001	0.004
	7/03/91	0.81	0.32	0.043	0.016	0.043
	11/04/91	0.97	0.1	0.019	0.005	0.013
	1/20/92	0.09	0.0007	0.0007	ND	0.011
	5/07/92	0.18	0.027	0.014	0.0082	0.035
	8/17/92	0.087	0.012	0.0098	0.004	0.042
OTMW-6	8/17/92	ND	ND	ND	ND	ND

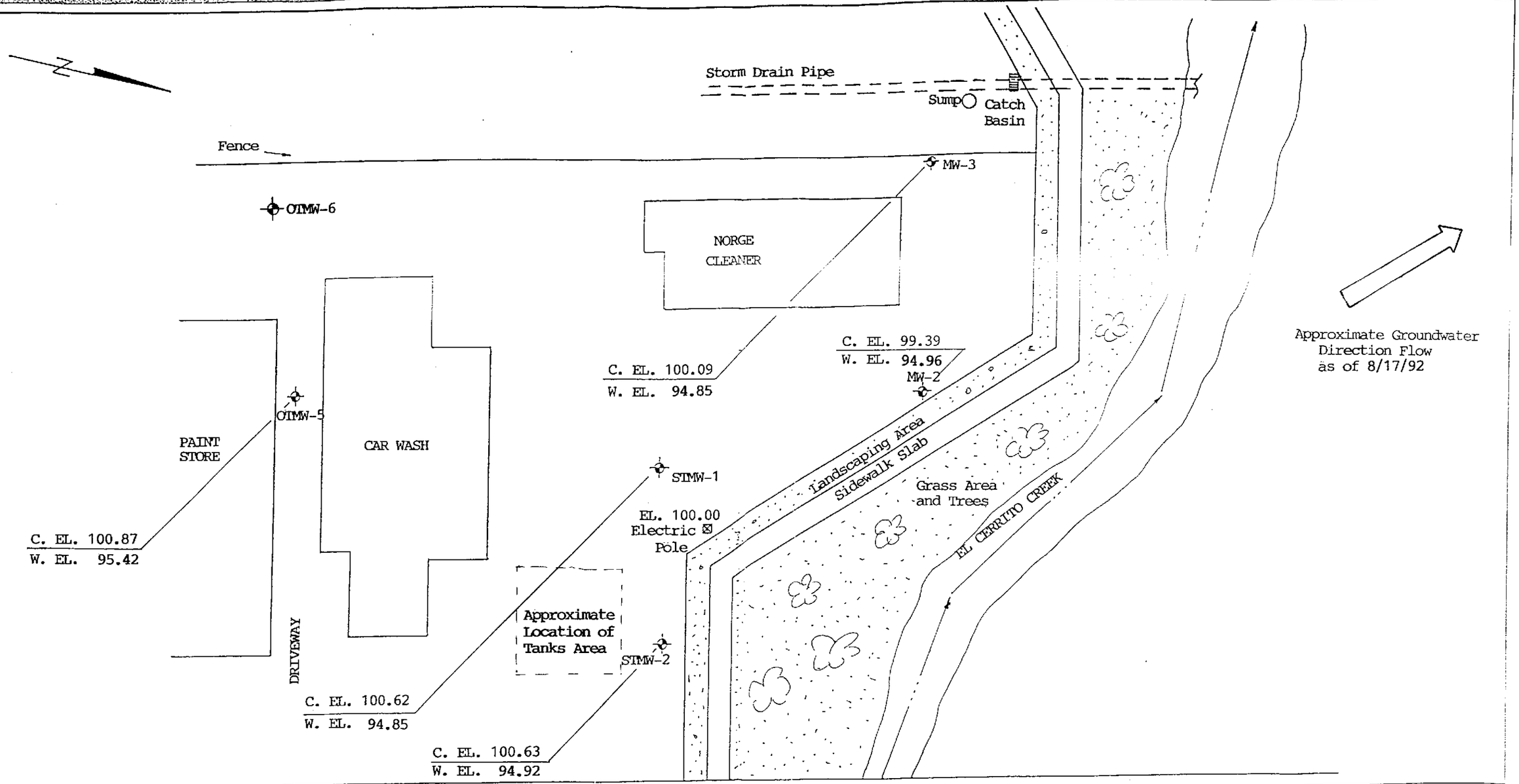
TPHg - Total Petroleum Hydrocarbons as gasoline
BTEX - Benzene, Toluene, Ethylbenzene, Total Xylenes
ND - Not Detected (Below Laboratory Detection Limit)



THOMAS BROS. MAP 1982 EDITION
ALAMEDA COUNTY

PAGE 1 D2

Figure 1



DIRECTION OF GROUNDWATER FLOW

400 SAN PABLO AVENUE, ALBANY, CALIFONRIA

1" = 30'	PROJECT NO. 8-90-421-SI	FIGURE - 2
DRAWN BY N.A.		8-17-92

SOIL TECH ENGINEERING, INC.
298 BROKAW ROAD, SANTA CLARA, CA 95050

File No. 8-90-421-SI

GROUNDWATER SAMPLING

Prior to collection of groundwater samples, all of the sampling equipment (i.e. bailer, cables, bladder pump, discharge lines and etc...) was cleaned by pumping TSP water solution followed by distilled water.

Prior to purging, the well "Water Sampling Field Survey Forms" were filled out (depth to water and total depth of water column were measured and recorded). The well was then bailed or pumped to remove four to ten well volumes or until the discharged water temperature, conductivity and pH stabilized. "Stabilized" is defined as three consecutive readings within 15% of one another.

The groundwater sample was collected when the water level in the well recovered to 80% of its static level.

Forty milliliter (ml.), glass volatile organic analysis (VOA) vials with Teflon septa were used as sample containers. The groundwater sample was decanted into each VOA vial in such a manner that there was a meniscus at the top. The cap was quickly placed over the top of the vial and securely tightened. The VOA vial was then inverted and tapped to see if air bubbles were present. If none were present, the sample was labeled and refrigerated for delivery under chain-of-custody to the laboratory. The label information would include a sample identification number, job identification number, date, time, type of analysis requested, and the sampler's name.

PRIORITY ENVIRONMENTAL LABS

Precision Environmental Analytical Laboratory

August 20, 1992 PEL # 9208036

SOIL TECH ENGINEERING

Attn: Noori Ameli
Re: Six water samples for Gasoline/BTEX analysis.

Project name: 400 San Pablo Ave -Albany
Project number: 8-90-421-SI

Date sampled: Aug 17, 1992 Date submitted: Aug 19, 1992
Date extracted: Aug 19-20,1992 Date analyzed: Aug 19-20,1992

RESULTS:

SAMPLE I.D.	Gasoline (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl Benzene (ug/L)	Total Xylenes (ug/L)
STMW-1	2700	31	18	19	67
STMW-2	16000	180	220	210	620
MW-2	6000	48	27	65	180
MW-3	140000	2500	2400	1700	5500
OTMW-5	87	12	9.8	4.0	42
OTMW-6	N.D.	N.D.	N.D.	N.D.	N.D.
Blank	N.D.	N.D.	N.D.	N.D.	N.D.
Spiked Recovery	89.2%	95.4%	92.9%	89.7%	102.3%
Duplicate Spiked Recovery	93.1%	87.4%	83.5%	95.2%	94.6%
Detection limit	50	0.5	0.5	0.5	0.5
Method of Analysis	5030 / 8015	602	602	602	602

David Duong
Laboratory Director

1764 Houret Court Milpitas, CA. 95035 Tel: 408-946-9636 Fax: 408-946-9663

CHAIN OF CUSTODY RECORD

PEL

PROJ. NO.	NAME
8-90-421-51	400 San Pablo Av. ALBANY

SAMPLERS: *(Signature)* A. Amt

NO.	DATE	TIME	SOIL	WATER	LOCATION	CONTAINER	ANALYSES REQUESTED (2) TPHG/BTEX	REMARKS
1	8/17/92	12^{25}		✓	STMW-1	2	✓	
2	8/17/92	12^{55}		✓	STMW-2	2	✓	
3	8/17/92	13^{45}		✓	MW-2	2	✓	
4	8/17/92	14^{40}		✓	MW-3	2	✓	
5	8/17/92	13^{20}		✓	OTMW-5	2	✓	
6	8/17/92	14^{10}		✓	OTMW-6	2	✓	

Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date / Time	Receive by: *(Signature)*
A. Amt	8/19/92 8^{40}	Victor Duong			
Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*
		VICTOR DUONG			
Relinquished by: *(Signature)*	Date / Time	Received for Laboratory by: *(Signature)* PEL	Date / Time 8/19/92 8^{40}	Remarks	

SOIL TECH ENGINEERING
Soil, Foundation and Geological Engineers
298 BROKAW ROAD, SANTA CLARA, CA 95050 ■ (408) 496-0265 OR (408) 496-0266

CHAIN OF CUSTODY RECORD

PEL # 9208036

INV # 23009

PROJ. NO.	NAME
8-90-421-51	400 San Pablo Av. ALBANY

SAMPLERS: *(Signature)*

NO.	DATE	TIME	SOIL	WATER	LOCATION	CONTAINER	ANALYSES REQUESTED (2) TPH G/BTE&X	REMARKS
1	8/17/92	12:25		✓	STMW-1	2	✓	
2	8/17/92	12:55		✓	STMW-2	2	✓	
3	8/17/92	13:45		✓	MW-2	2	✓	
4	8/17/92	14:40		✓	MW-3	2	✓	
5	8/17/92	13:20		✓	OTMW-5	2	✓	
6	8/17/92	14:10		✓	OTMW-6	2	✓	

Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date / Time	Receive by: *(Signature)*
N. Ruiz	8/19/92 8:40	Victor Duong			
Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*
		VICTOR DUONG			
Relinquished by: *(Signature)*	Date / Time	Received for Laboratory by: *(Signature)* PEL	Date / Time 8/19/92 8:40	Remarks	

SOIL TECH ENGINEERING

Soil, Foundation and Geological Engineers

298 BROKAW ROAD, SANTA CLARA, CA 95050 ■ (408) 496-0265 OR (408) 496-0266